

**REMARKS**

In the present application, claims 1, 10, 15, 21, and 22 have been amended to clarify the invention. Claims 23 and 24 are newly added. Claims 13 and 19 have been cancelled. Claims 1, 2, 4-11, 14-16 and 18, and 20-22 are pending Applicant respectfully responds to the Final Office Action.

***Claim Rejections – 35 USC § 103***

Claims 1, 2, 4-11, 13-16 and 18-22 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Ahn et al. (US Patent No. 6,681,111) in view of Murtagh et al. (US Patent Publication No. 2004/0133623).

The Office has the burden under 35 U.S.C. § 103 to establish a prima facie case of obviousness. In re Piasecki, 745 F.2d 1468, 1471-72, 223 USPQ 785, 787 (Fed. Cir. 1984). To establish a prima facie case of obviousness, four basic criteria must be met. Obviousness is a question of law based on underlying factual inquiries, which inquiries include: (a) determining the scope and content of the prior art; (b) ascertaining the differences between the claimed invention and the prior art; (c) resolving the level of ordinary skill in the pertinent art; and, if applicable, and (d) secondary considerations. *Graham v. John Deere Co.*, 383 U.S. 1 (1966).

Applicants respectfully submit that the present claims are not obvious in view of the cited references under a *Graham* analysis. More specifically, one of ordinary skill in the art would not arrive at Applicant's claimed invention in view of the differences between the cited reference and the presented claims.

**Present Application 10/804,265**

By way of illustration, but not limiting the scope of the claims, Applicants claims a General Global Gateway (GGG) which internetworks and is located between a first network and a second network. Mobile stations of the first network (e.g., a GSM network) support a GSM signaling protocol and a GSM authentication procedure. Mobile stations of the second network, (e.g., a CDMA network) support a CDMA signaling protocol and a CDMA authentication procedure (paragraph [0028]). The GGG appears as a visitor location register (VLR) to both the

first and second networks. The GGG may receive, for example, a location message from a mobile station subscribed with the first network but seeking to operate on the second network. The GGG may use *an identifier in the location message to obtain authentication information to know which HLR/AuC it needs to interrogate* (paragraph [0031]). That is, the GGG may contact the authentication center for the first network to obtain authentication information for the mobile station. Upon receiving the authentication information from the first network, the GGG *stores the first network's authentication parameters for subsequent accesses* of other networks by the mobile station. Thus, the entire authentication procedure may not need execution on a subsequent access, which means the first network's core may not need accessing (paragraph [0065]). That is, the mobile station can be subsequently re-authenticated by the GGG without then need to contact the authentication center for the first network. A check may made to determine whether the authentication parameters continue to meet GGG authentication criteria (e.g., check the format of the authentication parameters sent by the mobile device). (Paragraph [0068]).

#### **Claims 1, 10, 15, 21 and 22**

Independent claims 1, 10, 15, and 22 recite, *inter alia*, “store the authentication information for the first network so that subsequent accesses of other networks by the mobile station can be performed by the GGG without contacting the first network” and “wherein the GGG appears as a visitor location register to both the first and second networks.”

#### **Scope and Content of the Prior Art**

##### *U.S. Patent No. 6,681,111 (Ahn)*

Ahn discloses the use of an international roaming gateway system (IRGS) 300 for connecting a CDMA system 100 and a GSM system 200 and converting signals between the networks. (Col. 3, lines 62-65). The IRGS 300 functions as a home location register (HLR) to manage profiles of GSM SIM subscribers from the viewpoint of the CDMA system 100. The IRGS 300 functions as a visitor location register (VLR) in order for the GSM system 200 to read

the location of the roaming GSM SIM subscriber from the viewpoint of the CDMA system 100. (Col. 4, lines 34-40). Importantly, where a GSM subscriber roams into the CDMA system 100, authentication of the GSM subscriber is performed by an authentication center 260 (in the GSM system 200) outside the IRGS 300. (Col. 5, line 28 to Col. 6, line 45 and Figs 2 and 3). Where a CDMA subscriber roams into the GSM system 200, authentication of the CDMA subscriber appears to be performed by an authentication center on the CDMA system 100 (Col. 4, lines 8-16).

*U.S. Publication No. 2004/0133623 (Murtagh)*

Murtagh teaches "using a virtual mobile node to allow CDMA operator the ability to offer services to subscribers of GSM network (abstract, paragraphs 0002, 0031 . . . teaches the virtual mobile node (see VM in Figs. 3 and 4) connected to an interworking gateway (see MAR in figure 3 and 4) wherein the virtual mobile node contains both GSM HLR and MSC functions (Paragraphs 0033 and 0041) which means that CDMA operator can offer services to subscribers of the GSM network (paragraph 0033) and visa versa (paragraph 0034). Note that while Murtagh may disclose facilitating communications between two networks, it is silent as to how authentication of the mobile subscriber occurs.

**Ascertaining the Differences Between the Claimed Invention and the Prior Art**

Applicant has amended independent claims 1, 10, 15, 21 and 22 to more clearly receive novel aspects of the present application.

*Limitation - store the authentication information for the first network so that subsequent accesses of other networks by the mobile station can be performed by the GGG without contacting the first network.*

The Office Action appears to rely on Ahn as teaching this limitation. Specifically, in the Final Office Action (bottom of page 12 to top of page 13), it is noted that Ahn "clearly shows the IRGS functions as the HLR to manage the profiles of the GSM SIM subscribers from the viewpoint of the CDMA system and functions as the VLR in order for the GSM system to read

the location of the roaming GSM SIM subscriber via the IRGS (col. 4, lines 34-39).” However, such analysis misunderstands the scope of this claim. In particular, *location information* is maintained by a HLR is distinct from *authentication* of a mobile station. While a current network *location* for a subscriber mobile station may be identified by a home location register (HLR), authentication of the mobile subscriber is typically a separate function performed by an authentication center (AuC). In Ahn, the authentication center (AuC) is separate from the HLR and visiting location register (VLR). (See Col. 4, lines 13-16 and lines 19-23). At no time does Ahn describe that the IRGS 30 (either HLR/SMC or VLR) can perform authentication or that it stores authentication information from a network so that it may be used in a subsequent access request by the same mobile station. In fact, Fig. 2 of Ahn clearly shows that the IRGS 300 relies on the GSM HLR 220 and AuC 260 for authenticating the mobile station. (See Col. 5, lines 47-54). Ahn does not describe that the IRGS 300 can store authentication parameters from the authenticating network so that the mobile station may be subsequently authenticated (e.g., when joining another network) without the need to contact the authenticating network.

Murtagh fails to make up for the deficiencies of Ahn since it fails to teach, suggest or disclose the authentication of a mobile station by the GGG.

*Limitation - the GGG appears as a visitor location register to both the first and second networks.*

The Final Office Action has clearly noted that the IRGS 300 of Ahn operates as a HLR from the viewpoint of the CDMA system 100 and functions as a VLR from the viewpoint of the GSM system 200. (See bottom of page 12 to top of page 13). By contrast, as amended, the present claimed invention recites that the GGG appears as a VLR to both the first and second networks. Support for this limitation is found in Paragraph 0024 of the present application. Consequently, the prior art also fails to teach or suggest this limitation.

Since Ahn and Murtagh each fail to teach or suggest the invention as claimed in independent claims 1, 10, 15, 21 and 22, any combination of these references also fail to teach the elements of the above claims.

Claims 2, 4, 5, 7, 11, 14, 16, and 20-22

As to dependent claims 2, 4, 5, 7, 11, 14, 16 and 20-22 the Office Action also cites Ahn and Murtagh, either alone or in combination, as teaching the recited limitations. While Applicant disagrees that the cited prior art teaches the limitations recited in these claims, this argument need not be reached since these dependent claims are in condition for allowance due to their dependence on independent claims 1, 10 and 15.

Applicant has reviewed the references made of record and asserts that the pending claims are patentable over the references made of record.

In view of the above, therefore, Applicant respectfully requests reconsideration and withdrawal of the rejection of, and/or objection and allowance of claims 1, 2, 4-11, 14-16, 18, and 20-24.

Should any of the above rejections be maintained, Applicant respectfully requests that the noted limitations be identified in the cited references with sufficient specificity to allow Applicant to evaluate the merits of such rejections. In particular, rather than generally citing whole sections or columns, Applicant requests that the each claimed element be specifically identified in the prior art to permit evaluating the references.

**CONCLUSION**

In light of the amendments contained herein, Applicant submits that the application is in condition for allowance, for which early action is requested.

Please charge any fees or overpayments that may be due with this response to Deposit Account No. 17-0026.

Respectfully submitted,

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